

**PATENT COOPERATION TREATY**

FROM THE  
INTERNATIONAL SEARCHING AUTHORITY

TO:

**Rodyk & Davidson  
Robinson Road  
PO Box 462  
SINGAPORE 900912**

**PCT**

NOTIFICATION OF TRANSMITTAL OF  
REQUESTED COPIES OF CITED DOCUMENTS

(PCT Article 20(3))

Date of Mailing  
(day/month/year)

**14 JUNE 2000**

Applicant's or agent's file reference

**INFORMATION ONLY**

International Application No.

**PCT/SG00/00012**

International Filing Date

(day/month/year) **31 JANUARY 2000**

Applicant

**SINGAPORE POLYTECHNIC ET AL**

This International Searching Authority, in response to the request received, transmits herewith copies of the documents listed below which were cited in the international search report established on the international application.

**JP63-144855**

**EP18450**

**GB1035875**

**US5846287**

**US4670884**

**US3683094**

**US4700769**

**RU429099**

**US4110546**

**US5168917**

**JP56-151162**

**US4572673**

**US9563579**

**US5956366**

**RECEIVED**

**20 JUN 2000**

**RE DVK & GARMSTRONG**

Name and mailing address of the ISA/AU  
**AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaaustralia.gov.au  
Facsimile No.: (02) 6285 3929**

Authorised Officer  
**GARY ARMSTRONG**

Telephone No.: (02) 6283 2412

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference LAM/99058235	<b>FOR FURTHER ACTION</b>	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/SG00/00012	International filing date (day/month/year) 31 January 2000	(Earliest) Priority Date (day/month/year) 2 February 1999
Applicant SINGAPORE POLYTECHNIC et al.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  Certain claims were found unsearchable (See Box I).3.  Unity of invention is lacking (See Box II).

## 4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

## 5. With regard to the abstract,

the text is approved as submitted by the applicant

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. The figure of the drawings to be published with the abstract is Figure No.

as suggested by the applicant.

2

None of the figures

because the applicant failed to suggest a figure

because this figure better characterizes the invention

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SG00/00012

**A. CLASSIFICATION OF SUBJECT MATTER**

Int. Cl. 7: B22D 41/015, 41/62

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
B22D 41/--, 1/00, 23/00, B01F/--

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
dwpi : (electrod+ or arc), (stir+ or agitat+ or mix+) & (crucibl+ or ladl+)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Patent Abstract of Japan, JP 63-144855 A (NIPPON KOKAN KK) 17 June 1988 & JP 63-144855 A	1-3, 6-8, 14-15, 18-19, 26
X	EP 18450 A1 (IWATANI SANGYO KK) 12 November 1980 See page 1 line 4, page 2 lines 26-28, page 4 lines 11-19, page 11 lines 9-12.	1-2, 10-14, 20-23, 27, 29-31
X	GB 1035875 A (INTERNATIONAL BUSINESS MACHINES CORPORATION) 13 July 1966	1-5, 14-17, 24-26
X	US 5846287 A (KUMAR et al.) 8 December 1998	6-7, 18
		1-3, 6, 14-15, 18

Further documents are listed in the continuation of Box C     See patent family annex

## Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"X" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Y" document member of the same patent family

Date of the actual completion of the international search  
15 May 2000

Date of mailing of the international search report  
24 MAY 2000

Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaaustralia.gov.au  
Facsimile No. (02) 6285 3929

Authorized officer

R.P. ALLEN  
Telephone No : (02) 6283 2134

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SG00/00012

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4670884 A (LETIZIA et al.) 2 June 1987 See column 1 lines 13-19, column 2 lines 11-17.	1-5, 14-18
X	US 3683094 A (SCHLIEGER) 8 August 1972	1-5, 14-17
Y	See abstract, figure 1.	6-7, 18
X	US 4700769 A (OHARA et al.) 20 October 1987	1-5, 14-17
Y	See column 4 lines 8-31, Figure 4.	6-7, 18
X	Derwent Abstract Accession No.18928W/11, Class M24, RU 429099 A, (CHELYABINSK METALLURG WK) 15 October 1974	1-5, 14-17
X	US 4110546 A (STENKVIST) 29 August 1978	1-4, 14-16
Y		6-7, 18
X	US 5168917 A (OKUDA et al.) 8 December 1992	1-2, 10-12, 14, 20-22, 24-25
X	Patent Abstract of Japan, JP 56-151162 A (NAKASEKO ISAO) 24 November 1981 See abstract and figures.	1-2, 5, 14, 26
Y	US 4572673 A (PORTER et al.) 25 February 1986	6-7, 18
P,X	US 5963579 A (HENRYON) 5 October 1999	1-3, 14-15, 25
P,X	US 5956366 A (SHIMIZU et al.) 21 September 1999	1-3, 14-15, 26

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
PCT/SG00/00012

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	5846287	AU	74091/94	CN	1128546	EP	713537
		US	5411611	WO	9504836		
US	4670884	EP	183654	IT	1208697		
US	3683094	NONE					
US	4700769	NONE					
US	4110546	DE	2648575	FR	2331233	GB	1557571
		JP	52060455	JP	61001990	SE	7512428
US	5168917	DE	4116071	FR	2662072	GB	2244020
		JP	4022564				
US	4572673	BR	8300696	CA	1220622	EP	86637
		ES	519736	ES	8405654	GB	2114907
		IN	158301	JP	58199651	ZA	8300844
US	5963579	BR	9803140	CA	2243523	EP	897770
		FR	2767081				
US	5956366	NONE					

END OF ANNEX